REMARKS

In Office Action dated July 13, 2005, claims 50-56, 59-65 and 68-83 are pending and under consideration. The Examiner has withdrawn the requirement of species restriction. Therefore, claims 50-56, 59-65 and 68-73 are under examination as directed to methods of culturing ES cells with a BMP antagonist. Claims 50-56 and 69-79 are allowed. Claims 59-65 are objected to under 37 C.F.R. §1.75. Claim 68 is objected to because it is dependent on rejected claim 59. Claims 80-83 are rejected under 35 U.S.C. §102(b) as allegedly anticipated by Thomson (U.S. Patent 5,843,780) or Carpenter et al. (US2002/0019046 A1).

This Response addresses each of the Examiner's rejections and objections. Applicant therefore respectfully submits that the present application is in condition for allowance. Favorable consideration of all pending claims is therefore respectfully requested.

Claims 59-65 are objected to under 37 C.F.R. §1.75 as being a substantial duplicate of claims 50-56.

Without acquiescing to the Examiner's position and in an effort to advance prosecution, Applicant has canceled claims 59-65 without prejudice. Withdrawal of the objection to claims 59-65 is therefore respectfully requested.

Claim 68 is objected to because it is dependent on rejected claim 59.

Applicant respectfully submits that claim 68 has been amended to delete the reference to claim 59. Withdrawal of the objection to claim 68 is therefore respectfully requested.

Claims 80-83 are rejected under 35 U.S.C. §102(b) as allegedly anticipated by Thomson (U.S. Patent 5,843,780) or Carpenter et al. (US2002/0019046 A1).

The Examiner contends that the specification does not specifically define a progenitor cell. However, referring to page 14, lines 24-26 of the specification, the Examiner states that within the context of the methods, the term "progenitor cell" is described as a cell capable of differentiation into any somatic lineage. With respect to claims 80 and 82, the Examiner states that no specific characteristic of the resulting cell is set forth in the product claims; and further, there is no guidance in the specification as to which cell marker would define the change from a stem cell to a progenitor cell. The Examiner reasons that, because embryonic stem (ES) cells are capable of giving rise to any somatic cell lineage, an ES cell can be interpreted to be a type of progenitor cell. With respect to claims 81 and 83, the Examiner states that the evidence of record indicates that ES cells do not have any of the specific markers recited in the claims. Furthermore, the Examiner indicates that wherein a progenitor cell is produced from culturing an ES cell in the presence of noggin, it is not clear whether noggin has any particular effect on the ES cell or a resulting progenitor cell to distinguish the progenitor cell from cells known in the art.

The Examiner further states that Thomson teaches primate embryonic stem cells, which, according to the Examiner would not have any of the cell surface markers recited in claims 81 or 83. Moreover, the Examiner states that Carpenter et al. also teach primate pluripotent stem cells, and specifically refer to embryonic stem cells taught by Thomson. The Examiner concludes that because the primate ES cells disclosed by Thomson and Carpenter et al. have the characteristics (i.e., capable of differentiation into any somatic lineage) of the instantly claimed progenitor cells, Thomson and Carpenter et al. anticipate the cells of claims 80-83.

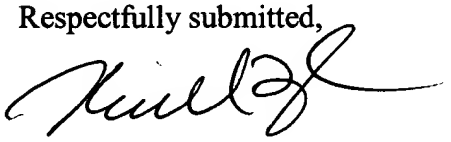
Applicant respectfully submits that claims 80-83 are directed to products prepared by the method of claim 69 or a method according to claims that depend from claim 69. Applicant respectfully directs the Examiner's attention to the recitation in claim 69 that defines the product prepared thereby, i.e., "said cell lacks at least one marker of the undifferentiated ES cell, lacks a marker of neruectoderm, and is capable of differentiating into a neural progenitor cell." Therefore, the products of claims 80-83, prepared by the method of claim 69 or a method according to claims that depend from claim 69, would be understood to also contain the product features recited in claim 69. In other words, the cells of claims 80-83 lack at least one marker of the undifferentiated ES cell, lack a marker of neruectoderm, and are capable of differentiating into a neural progenitor cell. If necessary for clarity, Applicant is willing to include these product features, which are recited in claim 69, into claims 80-83.

Applicant further respectfully submits that based on the language of claim 69, it is clear that claims 80-83 are directed to a progenitor cell that is an intermediate cell in terms of its differentiation status relative to undifferentiated ES cells and relative to more differentiated neural progenitor cells. It is also clear, in light of the teaching in the specification, that it is the presence of a BMP antagonist such as noggin that directs the differentiation of ES cells into this relatively more differentiated, intermediate type of progenitor cells.

Applicant respectfully submits that the progenitor cells of claims 80-83, which lack at least one marker of the undifferentiated ES cell and are more differentiated than undifferentiated ES cells, are clearly distinct from the ES cells disclosed by Thomson and Carpenter et al. Therefore, the anticipation rejection of claims 80-83 based on Thomson or Carpenter et al. is overcome. Withdrawal of the rejection is respectfully requested.

In view of the foregoing amendments and remarks, it is firmly believed that the subject application is in condition for allowance, which action is earnestly solicited.

Respectfully submitted,



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